

PATENT

Attorney Docket No.: 028058-000110US

TO THE ATTENTION OF EXAMINER GOLAM MOWLA

In re application of:

Phillip C. Watts

Application No.: 10/823,353

Filed: April 13, 2004

For: SAME PLANE MULTIPLE
THERMOELECTRIC MOUNTING
SYSTEM

Customer No.: 20350

Confirmation No. 4721

Examiner: Mowla, Golam

Technology Center/Art Unit: 1795

PROPOSED NEW CLAIM
AMENDMENTS FOR DISCUSSION

October 7, 2009

Dear Examiner Mowla:

Please find below a proposed set of claims for discussion. I'll look forward to speaking with you. I can be reached at 303-571-4000.

Best Regards,

David W. Boyd

Reg. No. 50,335

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1- 7. (Canceled)

8. (Currently amended) A thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid, the thermoelectric generator comprising:

a plurality of thermoelectric modules, wherein:

each of the thermoelectric modules comprises a first side and a second side; and

each of the thermoelectric modules generates electricity when there is a difference in temperature between the first side and the second side;

a first thermal module, wherein:

the first thermal module comprises a first block including a first passage through which first passage is configured to receive the first fluid flows through the block; and

first thermal module is configured to exchange heat with the first sides of at least two of the plurality of thermoelectric modules; and

a plurality of second thermal modules, wherein:

each of the plurality of second thermal modules comprises a respective second block including a respective second passage through which second passage is configured to receive the second fluid flows through the respective second block; and

a side of each of the second thermal modules is configured to exchange heat with exactly one of the thermoelectric modules through the second side of the respective thermoelectric module; and

each of the second thermal modules is ~~configurable in at least two axes with respect to the first thermal module such that each of the second thermal~~

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modules accommodates ~~tolerance variation~~ all axis mechanical variance in its respective thermoelectric module.

9. (Currently amended) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein the thermoelectric generator further comprises:

a compression mechanism, wherein the compression mechanism is operably coupled with two of the plurality of second thermal modules such that [[at]] the first thermal module and at least one of the plurality of thermoelectric modules is compressed between two of the plurality of second thermal modules.

10. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism comprises a rod and a spring.

11. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compress with an actively variable force.

12. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compensate for thermal expansion and thermal contraction of at least one of the plurality of second thermal modules.

13. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

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the compression mechanism is configured to compensate for stack tolerance build-up of the plurality of second thermal modules.

14. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein;

at least one of the plurality of second thermal modules is compliantly coupled with at least one other of the plurality of second thermal modules.

15. (Currently amended) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 14, wherein at least one of the plurality of second thermal modules being compliantly coupled with at least one other of the plurality of second thermal modules comprises:

at least one of the plurality of second thermal modules compliantly coupled with at least one other of the second thermal modules ~~such that the thermal modules have three axes of movement relative to the each other, allowing all axis expansion, contraction and natural~~ mechanical variance in elements of a stack comprising at least one of the plurality of thermoelectric modules.

16. (Currently amended) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 14, wherein at least one of the plurality of second thermal modules being compliantly coupled with at least one other of the plurality of second thermal modules comprises:

at least one of the plurality of second thermal modules being coupled via an o-ring slip joint with at least one other of the ~~second~~ plurality of first second thermal modules.

17. (Withdrawn) A thermoelectric generator for generating electricity from a temperature differential between a plurality of thermal modules, the thermoelectric generator comprising:

a first thermal module;

a second thermal module;

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a first thermoelectric module disposed between the first thermal module and the second thermal module;

a third thermal module; and

a second thermoelectric module disposed between the second thermal module and the third thermal module, wherein the first thermal module is flexibly coupled with the third thermal module.

18. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the first thermal module comprises:

a first sub-module flexibly coupled with a second sub-module.

19. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the second thermal module comprises:

a first sub-module flexibly coupled with a second sub-module.

20. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the first thermal module being flexibly coupled with the third thermal module comprises:

a compression mechanism operably coupled with the first thermal module and the third thermal module.

21. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 20, wherein:

the compression mechanism is configured to compensate for thermal expansion and thermal contraction of at least the second thermal module.

22. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein

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the first thermal module and the third thermal module are flexibly and fluidically coupled.

23. (Canceled)

24. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first fluid is at a higher temperature than the second fluid.

25. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first fluid and the second fluid are received from external storage reservoirs.

26. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first fluid and the second fluid circulate to and from external storage reservoirs.

27. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, further comprising a common inlet through which the second fluid is received for distribution to all of the second thermal modules.

28. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein both fluids are liquids.

29. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 28, wherein both liquids comprise water.

30. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first thermal module is rectangular.

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31. (New) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein each of the second thermal modules is rectangular.